

IN THE CLAIMS:

1. (Currently Amended) A bonding apparatus comprising a bonding part which bonds together a plurality of substrates coated with an adhesive agent, and a curing part which cures the adhesive agent of the substrates that have been bonded together, characterized in that

the bonding apparatus has conveying means which

(1) conveys the substrates coated with an adhesive agent to the bonding part;

(2) conveys the substrates from a vacuum vessel into an atmosphere at room temperature after the substrates are bonded in the vacuum vessel of the bonding part while being vacuumed; and

(3) conveys the substrates to the curing part, [[and]]

the conveying means has a standing part which allows the bonded substrates to stand at room temperature in the atmosphere, out of the vacuum vessel, while conveying the plurality of substrates for a time period required for any correction of warping of the bonded substrate before the adhesive agent is cured and

the conveying means is formed so that no operation of any shifting of the substrates is performed in an interval extending from the bonding part to the curing part.

2. (Original) The bonding apparatus according to claim 1, characterized in that the conveying means is a turntable which rotates while carrying a plurality of substrates.

3. (Original) The bonding apparatus according to claim 2, characterized in that a plurality of the turntables are provided.

4. (Original) The bonding apparatus according to claim 3, characterized in that the plurality of turntables include concentric small-diameter and large-diameter tables.

5.-6. (Cancelled)

7. (Previously Presented) The bonding apparatus according to claim 1, characterized in that the conveying means has an accommodating part which stacks and accommodates a plurality of substrates that are conveyed from the bonding part while conveying the substrates to the curing part.

8.-14. (Cancelled)

15. (Previously Presented) An apparatus for manufacturing optical recording disks including a pair of thin plastic substrates including a recording layer that are coated with an adhesive agent and bonded together, the improvement of annealing the optical recording disks comprising:

5 a rotatable conveying unit that receives the pair of plastic substrates with the adhesive agent between the pair of plastic substrates at a load position; and

means for rotating the conveying unit to position the pair of plastic substrates sequentially at

(1) a bonding position to enable application of a vacuum to the pair of
10 plastic substrates for bonding;

(2) a pre-curing position to enable movement of the vacuumed bonded pair of plastic substrates without further contacting the vacuumed bonded pair of plastic

substrates in an atmospheric temperature for a first predetermined time period to prevent warping by relieving internal stress between the pair of plastic substrates;

15 (3) a curing position to enable an irradiation of ultraviolet light to the pre-cured bonded pair of plastic substrates;

 (4) a post curing position to enable relief of any post curing heat warping resulting from the curing by irradiation in an atmospheric temperature for a second predetermined time period; and

20 (5) an exit position for removal of the optical recording disk.

16. (Previously Presented) The apparatus for manufacturing optical recording disks of claim 15 wherein the means for rotating maintains the bonded pair of plastic substrates at the pre-curing position during the first predetermined time period for at least 15 seconds.

17. (Previously Presented) The apparatus for manufacturing optical recording disks of Claim 16 wherein the rotatable conveying unit consists of only a turntable which rotates while carrying a plurality of plastic substrates.

18. (Currently Amended) An apparatus for manufacturing optical recording disks
5 including a pair of thin plastic substrates including a recording layer that are coated with an adhesive agent and bonded together, the improvement of annealing the optical recording disks comprising:

 a rotatable turntable conveying unit that receives the pair of plastic substrates with the adhesive agent between the pair of plastic substrates at a load position; and

10 means for rotating the conveying unit to position the pair of plastic substrates on said turntable sequentially at

(1) a bonding position to enable application of a vacuum to the pair of plastic substrates for bonding;

15 (2) a pre-curing position to enable movement of the bonded pair of plastic substrates on said turntable to prevent warping by relieving internal stress between the pair of plastic substrates for a first predetermined time period at atmospheric pressure and temperature while being supported and moved with the only contact of the bonded pair of plastic substrates being the rotatable turntable;

20 (3) a curing position to enable an irradiation of ultraviolet light to the pre-cured bonded pair of plastic substrates;

(4) a post curing position to enable movement of the cured bonded pair of plastic substrates on said turntable for relief of any heat warping resulting from the curing by irradiation for a second predetermined time period at atmospheric pressure and temperature; and

25 (5) an exit position for removal of the optical recording disk from said turntable.

19. (Currently Amended) The apparatus for manufacturing optical recording disks of claim [[15]] 18 wherein the means for rotating maintains the bonded pair of plastic substrates at the pre-curing position the first predetermined time period for at least 15 seconds.

20. (Previously Presented) The apparatus for manufacturing optical recording disks of Claim 16 wherein the rotatable conveying unit consists only of said turntable which rotates while carrying a plurality of plastic substrates.

21. (Previously Presented) An apparatus for manufacturing optical recording disks including a pair of thin plastic substrates including a recording layer that are coated with an adhesive agent and bonded together, the improvement of annealing the optical recording disks comprising:

5 a rotatable conveying unit that receives the pair of plastic substrates with the adhesive agent between the pair of plastic substrates at a load position; and

means for rotating the conveying unit to position the pair of plastic substrates sequentially at

(1) a bonding position to enable application of a vacuum to the pair of
10 plastic substrates for bonding;

(2) a pre-curing position to enable movement of the vacuumed bonded pair of plastic substrates without further contacting the vacuumed bonded pair of plastic substrates in an atmospheric temperature for a first predetermined time period to prevent warping by relieving internal stress between the pair of plastic substrates;

15 (3) a curing position to enable an irradiation of ultraviolet light to the pre-cured bonded pair of plastic substrates;

(4) an exit position for removal of the optical recording disk.

22. (Previously Presented) The apparatus for manufacturing optical recording disks of claim 21 wherein the means for rotating maintains the bonded pair of plastic substrates at the pre-curing position during the first predetermined time period for at least 15 seconds.

23. (Previously Presented) The apparatus for manufacturing optical recording disks of claim 21 wherein the means for rotating maintains the bonded pair of plastic substrates at the pre-curing position during the first predetermined time period for at least 7 seconds.

24. (New) A bonding apparatus comprising a bonding part which bonds together a plurality of substrates coated with an adhesive agent, and a curing part which cures the adhesive agent of the substrates that have been bonded together, characterized in that

the bonding apparatus has conveying means which

5 (1) conveys susceptors carrying the substrates coated with an adhesive agent to the bonding part;

(2) conveys susceptors carrying the substrates from the vacuum vessel into an atmosphere at room temperature after the substrates are bonded in the vacuum vessel of the bonding part while being vacuumed; and

10 (3) conveys susceptors carrying the substrates to the curing part,
the conveying means has a standing part which allows the bonded substrates to stand at room temperature in the atmosphere, out of the vacuum vessel, while conveying the plurality of substrates for the time period required for correction of warping of the bonded substrate before the adhesive agent being cured, and

15 the conveying means is formed so that no operation of any shifting of the substrates is performed to settle into a stable state in an interval extending from the bonding part to the curing part.